

EXHIBIT A

Brad A. Myers

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Research Interests:

User Interface Software, Hand-held computers, Demonstrational Interfaces, User Interface Design, Window Managers, Visual Programming, Programming Environments, End-User Software Engineering.

Experience:

Human Computer Interaction Institute

Professor, 2004 - present.

Associate Research Professor, 2003 - 2004.

Senior Research Scientist, 1995 - 2003.

Computer Science Department

Senior Research Computer Scientist, 1992 - 1995.

Research Computer Scientist, July 1987- 1992.

School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

Principal investigator for the Pebbles PDA project, funded by DARPA, NSF and industry, which is investigating the use of hand-held computers like Pocket PC/Windows CE and PalmOS devices synchronously with PCs. By "synchronously," we mean that a set of hand-helds will be connected to a laptop or desktop computer at the same time, so that the hand-helds will be in continuous two-way communication with the main computer and with each other. We are focusing on situations where the participants are co-located.

Principal investigator for the Natural Programming Project, funded by NSF. This project is creating new programming languages that will be easy to learn for children and adults. Through new experiments and by using the results from the HCI and Empirical Studies of Programming literature, we will determine the most "natural" ways to express programs. We will use these, along with new metaphors, in the design for a new language and environment.

Principal investigator for the Silver Project, funded as part of the second Digital Libraries Initiative,

which is investigating authoring with digital video.

Principal investigator for the User Interface Software Project, funded by ARPA and industry, which developed sophisticated user interface development environments to help build graphical user interfaces. Garnet, our earlier system, is in Lisp, and introduced encapsulating mouse and keyboard behaviors into abstract "interactors." Amulet, the second system, is in C++ and runs on Unix, Windows NT and 95, and Macintosh. Amulet is downloaded about 10,000 times a year, and incorporates novel object, constraint, input, output, undo, command and animation models to provide high-level support for highly-interactive, multi-media applications for one or multiple users. An important focus is high-level graphical editors which allow the user interface designer to draw all graphical aspects of user interfaces, and to demonstrate most of the behavior of the user interface.

Principal investigator for the Demonstrational Interfaces project, funded by NSF and industry. In a "demonstrational interface," the user gives an example of how the system should operate, and the system automatically generalizes from the example to produce a parameterized procedure. For instance, in the Macintosh Finder, the user might move "foo.PS" and then "bar.PS" to the trash can. The system might notice that a similar operation was performed twice and automatically create a procedure to delete all the "*.PS" files. We are developing a demonstrational visual shell (iconic desktop), a text formatter, an editor for business charts, an editor for dynamic world-wide-web pages, and an architecture for programs that support demonstrational interfaces.

MacGnome project (1987-1988): designed a system that creates visualizations for Pascal data structures.

Consultant

1984-present:

1. **Sughrue Mion, PLLC**, Washington, DC
2. **Latham & Watkins LLP**, Los Angeles, CA
3. **Sidley Austin LLP**, Dallas, TX
4. **Ropes & Gray LLP**, Washington, DC
5. **Adobe Systems Inc.**, San Jose, CA
6. **National Expert Witness Network**, Paradise, CA
7. **McKool Smith**, Austin, TX
8. **Morris, Nichols, Arsht & Tunnell**, Wilmington, DE
9. **Thompson & Knight L.L.P.**, Dallas, TX
10. **Emerson Process Management**, Austin, TX
11. **Clairvoyance Corporation**, Pittsburgh, PA
12. **Wilmer Cutler Pickering Hale and Dorr LLP**, Boston, MA
13. **University of Pittsburgh Dept. of Nursing**, Pittsburgh, PA
14. **Cooley Godward LLP**, Reston, VA
15. **Level 3 Communications**, Broomfield, CO
16. **Cesari and McKenna**, Boston, MA
17. **Fish & Richardson**, Boston, MA and San Diego, CA
18. **Darby & Darby**, New York, NY
19. **Samsung Electronics**, Seoul, Republic of Korea
20. **Morrison & Foerster**, San Diego, CA
21. **Jones, Day, Reavis & Pogue**, Dallas, Texas
22. **Weil, Gotshal & Manges**, Menlo Park, CA
23. **Fenwick & West**, Palo Alto, CA

24. **Kirkland & Ellis**, Los Angeles, CA
25. **Silicon Valley Expert Witness Group Inc.**, Mountain View, CA
26. **Jenkins & Gilchrist**, Dallas, TX
27. **Merchant & Gould**, Minneapolis, MI
28. **GlobalOne**, Reston, VA
29. **Lindquist & Vennum**, Minneapolis, MI
30. **Wilson Sonsini Goodrich & Rosati**, Palo Alto, CA
31. **Klarquist, Sparkman & Campbell**, Portland, OR
32. **Leydig, Voit & Mayer, Ltd**, Chicago, IL
33. **Maya Design Group** Pittsburgh, PA
34. **McDonnell Boehnen Hulbert & Berghoff**, Chicago, IL
35. **Serviceware, Inc.**, Pittsburgh, PA
36. **Secure Computing Corp.**, Roseville, MN
37. **Venable, Baetjer and Howard, LLP**, Baltimore, MD
38. **AT&T General Solicitor Organization**, NJ
39. **Signal Software**, Pittsburgh, PA
40. **Visual Interface**, Pittsburgh, PA
41. **Nixon & Vanderhye P.C.**, Arlington, VA
42. **PROMIS Systems Corp.**, Toronto, Ont, Canada
43. **Emerson Advanced Materials Ctr**, Columbus, OH
44. **Boeing Advanced Tech. Center**, Seattle, WA
45. **Virtual Prototypes, Inc.** Montreal, Canada
46. **Apple Computer, Inc.** Cupertino, CA
47. **Teklicon, Inc.** Mountain View, CA
48. **EJV Partners**, New York, NY
49. **Horizon Research, Inc.** Waltham, MA
50. **Carnegie Group, Inc.** Pittsburgh, PA
51. **Brown and Bain**, Palo Alto, CA
52. **Microsoft**, Redmond, WA
53. **Formative Technologies, Inc.** Pittsburgh, PA
54. **MegaScan**, Gibsonia, PA
55. **Expert Technologies, Inc.**, Pittsburgh, PA
56. **Behavioural Team**, Toronto, Canada
57. **Ashton-Tate, Inc.** Torrance, CA
58. **Eaton Corporation**, Los Angeles, CA
59. **Program Products Ltd**, London, England
60. **Institute for Defense Analyses**, Alexandria, VA
61. **Infodetics**, Anaheim, CA
62. **Ventura Technologies**, Toronto, Canada
63. **PERQ Systems Corporation**, Pittsburgh, PA

Advise on user interface design, user interface software, window manager design and implementation. Perform usability analyses and redesign of products. Intellectual property consulting for software and user interface patents. Reports, depositions and trial testimony on claim construction, infringement, prior art, and validity.

Manchester Business School, The University of Manchester, Manchester, UK
Visiting Professor, 2007-present.

Helium Networks, Pittsburgh, PA
Member of the Scientific Advisory Board, 2004-present

[EkaTetra Corporation](#), (formerly Clarinet Keyboard Corporation), Portland, OR
Technical Member of the Advisory Committee, 2001-present

[SCIconics, Inc.](#), Pittsburgh, PA
Member of the Advisory Board, 2002-present

Eizel Corporation, Pittsburgh, PA
Member of the Advisory Board, 2001-2003

PERQ Systems Corporation, Pittsburgh, PA
(formerly **Three Rivers Computer Corporation**)
Senior Software Engineer, 1980-1983.

Designed and implemented the Sapphire Window Manager, which was one of the first commercial window systems and featured full covered windows, a novel use of icons and percent-done progress indicators. Designed and implemented the PERQ directory structure for a hierarchical file system including a Scavenger program to correct file system inconsistencies. Also designed and implemented the PERQ's Pascal debugger, a comprehensive user interface package, various graphical editors, demonstration programs, and games.

Xerox Palo Alto Research Center, Palo Alto, CA
Research Intern, Summer 1977, Summer 1978, and Summer/Fall 1979

Developed a system called Incense which automatically created graphical, pictorial displays for data structures based on their types. Implemented Ethernet protocols in Smalltalk.

Education:

University of Toronto, Toronto, Ontario, Canada
1983-1987.

PhD in Computer Science, May, 1987. Was a Teaching Assistant for computer graphics courses. Grade point average for course work = A+.

Massachusetts Institute of Technology, Cambridge, Massachusetts
1975-1980.

Received Master of Science in Computer Science and Bachelor of Science in Computer Science and Engineering in 1980. Did Master's thesis on Incense while an intern at Xerox PARC. Worked at MIT Architecture Machine Group, 1976-1979. Final grade point average: 5.0 out of 5.0 (A+).

Awards and Honors:

University of Pittsburgh School of Nursing's Nursing Excellence in Teaching and Technology (NETT) Award for 2007 to PocketPATH, by Annette De Vito Dabbs, Brad A. Myers, Kenneth R. McCurry, Jacqueline Dunbar-Jacob, Robert P. Hawkins, Mary Amanda Dew.

[CHI 2006 Best Paper](#), awarded by SIGCHI, for "Trackball Text Entry for People with Motor Impairments," by Jacob O. Wobbrock and Brad A. Myers.

Designated an *ACM Fellow*, 2005. ([citation](#)) and ([press release](#))

Elected to the [CHI Academy](#), April, 2004, as one of the top 25 "[principal leaders of the field](#)" of HCI.

Distinguished Paper Award at the 27th International Conference on Software Engineering (ICSE'05) for "Eliciting Design Requirements for Maintenance-Oriented IDEs: A Detailed Study of Corrective and Perfective Maintenance Tasks" by Andrew J. Ko, Htet Htet Aung, and Brad A. Myers. May 2005.

Elected to the grade of Senior Member, IEEE (September, 2004).

First place in the 2004-2005 [NISH](#) National Scholar Awards for Workplace Innovation & Design, to Jacob Wobbrock, supervised by Brad Myers. Press release as [pdf](#)

Best Paper Award at the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '04) for "Text Entry from Power Wheelchairs: EdgeWrite for Joysticks and Touchpads" by Jacob O. Wobbrock, Brad A. Myers, Htet Htet Aung, and Edmund F. LoPresti. October 2004.

Best Student Paper award at USENIX 2000 Annual Technical Conference for "Integrating a Command Shell into a Web Browser" by Robert Miller and Brad Myers. June 2000.

Outstanding Paper Award at USENIX 1999 Annual Technical Conference for "Lightweight Structured Text Processing" by Robert C. Miller and Brad A. Myers. June 1999.

Winner, first place in the "Personal Productivity" category in the ACM Quest for Windows CE Applications, 1999.

Listed in *Marquis Who's Who in America*, 2007, 2009, *Marquis Who's Who in Finance and Industry*, 2004-2005, *Marquis Who's Who in the East*, 1995-2000, *Marquis Who's Who in the World*, 1996, *Marquis Who's Who in the Media and Communications*, 1997-1999, and *Marquis Who's Who in Science and Engineering*, 1998-2001. Included in *2000 Outstanding Scientists of the 20th Century*, International Biographical Centre, Cambridge, England.

PhD thesis nominated for ACM annual best dissertation contest. Selected to join Eta Kappa Nu and Tau Beta Pi. IEEE Student Paper contest winner 1978 and 1979. Awarded University of Toronto Open Fellowship. Graduated First Honor Student from Isadore Newman High School, 1975.

Research Grants:

- Adobe Systems Incorporated, 2007, \$70,000 cash, for "Making Programming Interactive Behaviors More Natural"
- SAP, Inc., 2007, \$160,000. API Usability for E-SOA.
- Microsoft Research, Support for the Pebbles Project. 2007: \$10,939 equipment; 2006: \$80,000 cash and \$2,500 equipment; 2004: \$4,000 equipment; 2003: \$8,500 equipment; 2002: \$80,000 cash; 2001: \$70,000 cash; 2000: \$70,000 cash; 1999: \$150,000 cash; 1998: \$100,000 cash + \$2,600 equipment.
- IBM. [2006 Eclipse Innovation Award](#). "Program Understanding and Debugging in Eclipse". \$27,000
- NSF. EEC-0540865, "[Quality of Life Technology Engineering Research Center](#)". 5/17/2006-

5/31/2011. \$15,000,000.

- NSF. IIS-0534349. "Automatically Generating Consistent User Interfaces for Multiple Appliances." 12/1/05-11/30/08. \$412,000.
- NACME/Philip D. Reed Undergraduate Fellowship. ([The National Action Council for Minorities in Engineering](#)). \$2,000 for Ivan Gonzalez, Brad Myers. 2005-2006.
- General Motors. "Using Handheld Devices for Information and Control in Vehicles." 2006: \$87,365. 2005: \$83,678. 2004: \$83,678. 2003: \$83,678; Summer, 2002: \$5000.
- Synaptics, Inc. 2004. Equipment: \$600.
- Nokia Research Center, Finland. 2004. Equipment: \$2000.
- [AT Sciences, LLC](#). 2004. Equipment: \$1300.
- [SMART Technologies, Inc.](#). 2000: Equipment: \$2998. 2004: Equipment: \$50.
- Lutron, Inc. "Remote Control of UPnP Devices". 2003. \$2000.
- Lantronix, Inc. "Remote Control of UPnP Devices". 2003. \$1144.
- NSF. IIS-0329090. "Lowering the Barriers to Successful Programming." Brad Myers and Randy Pausch. 2003-2007. \$1,200,000
- NSF ITR CCR-0324770: "Collaborative Research: Dependable End-User Software". 2003-2007. Margaret M. Burnett, Gregg Rothermel, Brad Myers, Martin Erwig, Margaret L. Niess, Sebastian Elbaum, Mary Beth Rosson, Mary Shaw, Susan Wiedenbeck. \$2,640,000. CMU Portion: \$324,000.
- IBM Canada, Ltd. "Update Pebbles for new Palms." 2003. Equipment: USD \$1,792.09
- DARPA. "Evolutionary Development of Self-Aware Learning Agents." Dan Siewiorek, Jaime Carbonell, Tom Mitchell, Manuela Veloso, Brad Myers, Randy Pausch, Alex Waibel, Eric Nyberg, Bill Scherlis, Raj Reddy, Howard Wactlar. \$38,765,940. 2003 - 2007.
- NEC Foundation of America. "Handhelds as Assistive Technologies for People with Muscular Disabilities." 2003. \$50,000.
- NSF. UA-0308065. "Using Handhelds to Help People with Motor Impairments." 2003-2007. \$475,232.
- NSF. EIA-0205301. "ITR: Collaborative Research: Putting a Face on Cognitive Tutors: Bringing Active Inquiry into Active Problem Solving." Albert Corbett, Kenneth Koedinger, Scott Stevens, and Brad Myers. \$2,414,648. 10/01/02 - 09/30/07.
- Mitsubishi Electric Research Laboratory. "Remote Control of HAVi Appliances in Pebbles." Mitsubishi WS-65909 65" Integrated HDTV Diamond Series television and Mitsubishi HS-HD2000U High Definition Digital VCR. 2002. \$6,500 plus \$1,500 for VividLogic HAVi toolkit.
- NSF. IIS-0223945. "Research Experiences for Undergraduates (REU) Supplement to IIS-0117658: Making it Easier to Interact with Technology Through Handheld Personal Universal Controllers." Summer, 2002. \$6000.
- NSF. IIS-0117658. "Making it Easier to Interact with Technology Through Handheld Personal Universal Controllers." 2001-2004. \$505,867.
- TDK Systems Europe, LTD. 2001. Six BlueTooth modules, \$700.
- [Pittsburgh Digital Greenhouse](#), Brad Myers and Jodi Forlizzi, "Using Mobile Devices as Universal Personal Controllers," 2000-2002, \$167,000.
- Hewlett Packard, "Ubiquitous Computing at Carnegie Mellon; Delivering Innovative Classroom Applications Using Handheld Devices", Diana Bajzek, Tracy Futhey, Kim Jordan, Dr. Brad Myers, Dr. Dan Siewiorek, Dr. Randy Weinberg, Dr. David Yaron. 2000. Equipment: 330 Jornada computers, \$304,170.
- Lucent Technologies, "Ubiquitous Computing at Carnegie Mellon; Delivering Innovative Classroom Applications Using Handheld Devices", Diana Bajzek, Tracy Futhey, Kim Jordan, Dr. Brad Myers, Dr. Dan Siewiorek, Dr. Randy Weinberg, Dr. David Yaron. 2000. Equipment: about 300 Wavelan wireless network PCMCIA cards for the HP Jornada's, approx. \$45,000.
- Symbol Technologies, Inc., Support for the Pebbles Project. 2000. Equipment: \$7300.
- CMU Small Undergraduate Research Grant (SURG). For work by Geoffrey Washburn: "A

- Graphics Library for Introductory Programming." Fall, 1999: \$425. Summer, 1999: \$3000.
- Palm Computing, Inc. Using Handhelds for the Handicapped, 2001: Equipment: \$516. Studying Multiple People using Pebbles Software and Hand-helds in Education, 2000: Equipment: \$4,788; 1999: Equipment: \$3,690.
 - IBM. Studying Multiple People using Pebbles Software. 1999. Equipment: \$3,725.
 - DARPA. "Adding Features to Pebbles," 1999. \$40,000.
 - NSF, etc. (Interagency program). [Digital Library Initiative-2](#), IIS-9817527. 1999-2002. "An Intelligent Authoring Tool for Non-Programmers Using the Informedia Video Library," Brad Myers, Scott Stevens and Al Corbett. \$450,000.
 - USENIX Association's Scholastic Committee grant for "Lightweight Structured Text Editing," (work of PhD student Rob Miller). 2000-2001: \$19,800. 1999-2000: \$18,300. 1998-1999: \$17,700.
 - NSF. IRI-9900452. 1999-2002. "A More Natural Programming Environment for Children," Brad Myers and Al Corbett. \$400,000.
 - DARPA under the Command Post of the Future program. "High Bandwidth Command and Control." With Bill Scherlis, Alex Waibel, Randy Pausch and Jie Yang. 1998-2002. \$2,706,000.
 - Dupont Corporation. Educational Aid Program. 1998. \$10,000.
 - NSF. IRI-9319969. 1994-1997. Demonstrational Interfaces for Visualization and End-User Programming. \$240,000.
 - ARPA. Contract N66001-94-C-6037, ARPA Order No. B326. 1994 - 1998. Creating User Interface Software. \$1,733,469.
 - Siemens Corporation. Unrestricted. 1995: \$20,000. 1990: \$20,000.
 - NEC. Unrestricted. 1993: \$5000. 1989: \$15,000.
 - NSF. IRI-9020089. 1991-1993 (two years). Using Demonstration in Interfaces. \$269,061.
 - DARPA. Contract F33615-90-C-1465, ARPA Order No. 7597. 1990-1993. Creating Graphical Interfaces. \$1,704,000.
 - General Electric. 1990-1991. Postscript and Visualization in Garnet. \$20,000.
 - Apple Computer, Inc. 1990. Garnet on a Macintosh. \$7000.
 - Apple Computer, Inc. 1989-1991. Demonstrational Interfaces. Equipment \$18,978, cash \$50,000.
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Publications:

Books:

1. Allen Cypher, Daniel C. Halbert, David Kurlander, Henry Lieberman, David Maulsby, Brad A. Myers and Alan Turransky, eds. *Watch What I Do: Programming by Demonstration*. Cambridge, MA: The MIT Press, 1993. [web page](#).
2. Brad A. Myers, ed. *Languages for Developing User Interfaces*. Boston: Jones and Bartlett, 1992. ISBN: 0867204508. <http://www.cs.cmu.edu/~bam/langbook.html>
3. Brad A. Myers. *Creating User Interfaces by Demonstration*. Boston, MA: Academic Press, May 1988. ISBN: 0125123051.

Book Chapters:

(Does not include reprints of conference articles listed below.)

4. Chris Scaffidi, Brad Myers, and Mary Shaw. "Trial By Water: Creating Hurricane Katrina 'Person Locator' Web Sites" *Leadership at a Distance: Research in Technologically-Supported Work S.*

- Weisband, ed, Lawrence Erlbaum, 2008. pp. 209-222.
5. Jacob O. Wobbrock and Brad A. Myers, "Adding gestural text entry to input devices for people with motor impairments", Chapter 14 in J. Lazar (ed.), *Universal Usability*. New York: John Wiley & Sons. 2007. pp. 421-456.
 6. John F. Pane and Brad A. Myers, "More Natural Programming Languages and Environments," in *End User Development*, vol. 9 of the Human-Computer Interaction Series, Henry Lieberman, Fabio Paterno, and Volker Wulf, eds. Dordrecht, The Netherlands: Springer, 2006, pp. 31-50.
 7. Brad A. Myers. "Graphical User Interface Programming," chapter 48 of *Computer Science Handbook -- Second Edition*. Allen B. Tucker, editor in chief. Boca Raton, FL: Chapman & Hall/CRC Press, Inc., 2004. pp. 48-1 - 48-29. [pdf](#)
 8. Brad Myers, Scott E. Hudson, and Randy Pausch, "Past, Present and Future of User Interface Software Tools," in John M. Carroll, ed. *HCI In the New Millennium*. New York: ACM Press, Addison-Wesley, 2001. pp. 213-233.
 9. Brad Myers and Richard McDaniel. "Demonstrational Interfaces: Sometimes You Need a Little Intelligence; Sometimes You Need a Lot." *Your Wish is My Command*. Henry Lieberman, Ed. San Francisco: Morgan Kaufmann, 2001. pp. 45-60.
 10. David Wolber and Brad Myers. "Stimulus-Response PBD: Demonstrating When as Well as What." *Your Wish is My Command*. Henry Lieberman, Ed. San Francisco: Morgan Kaufmann, 2001. pp. 321-344.
 11. Brad A. Myers, Rich McDaniel, and Rob Miller, "The Amulet Prototype-Instance Framework," in *Domain-Specific Application Frameworks*, edited by Mohamed Fayad and Ralph E. Johnson. New York: John Wiley & Sons, 2000. ISBN# 0-471-332801. pp. 529-546.
<http://www.cs.cmu.edu/~amulet/papers/amulettappframe.ps>
<http://www.cs.cmu.edu/~amulet/papers/amulettappframe.pdf>
 12. Brad A. Myers, Rich McDaniel, Rob Miller, Brad Vander Zanden, Dario Giuse, David Kosbie and Andrew Mickish, "The Prototype-Instance Object Systems in Amulet and Garnet," *Prototype Based Programming: Concepts, Languages and Applications*, James Noble, Antero Taivalsaari and Ivan Moore, eds. Singapore: Springer-Verlag, 1999. pp. 141-176. ISBN 981-4021-25-3. [pdf](#)
 13. Brad A. Myers. "User Interface Management Systems," *Wiley Encyclopedia of Electrical and Electronics Engineering, Volume 23*. John G. Webster, editor. New York: John Wiley & Sons, 1999. pp. 42-58.
 14. Brad A. Myers. "Interface Software Technology," chapter 72 of *CRC Handbook of Computer Science and Engineering*. Allen B. Tucker, editor in chief. Boca Raton, FL: CRC Press, Inc., 1997. pp. 1571-1595.
 15. Brad A. Myers. "Program Visualization," *Encyclopedia of Software Engineering*. John J. Marciniak, ed. New York: John Wiley & Sons, Inc., 1994. pp. 877-892.
 16. Brad A. Myers. "User Interface Software," *Encyclopedia of Computer Science and Technology*. Allen Kent and James G. Williams, editors. Vol. 33, no. 18. New York: Marcel Dekker, Inc., 1995. pp. 371-405. and *Encyclopedia of Microcomputers*. Allen Kent and James G. Williams, editors. New York: Marcel Dekker, Inc., 1996. pp. 223-257.
 17. Brad A. Myers. "State of the Art in User Interface Software Tools," *Advances in Human-Computer Interaction, Volume 4*. Edited by H. Rex Hartson and Deborah Hix. Norwood, NJ: Ablex Publishing, 1993. pp. 110-150. Reprinted in: R.Baecker, J.Grudin, W.Buxton, and S. Greenberg, eds. *Readings in Human-Computer Interaction: Toward the Year 2000*. Second Edition. San Francisco: Morgan Kaufmann Publishers, Inc., 1995. pp. 344-356.
 18. Brad A. Myers. "Peridot: Creating User Interfaces by Demonstration," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 125-153.
 19. Brad A. Myers. "Garnet: Uses of Demonstrational Techniques," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 219-236.
 20. Brad A. Myers. "Tourmaline: Text Formatting by Demonstration," *Watch What I Do:*

- Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 309-321.
21. Francesmary Modugno and Brad A. Myers. "Graphical Representation and Feedback in a PBD System," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 423-431.
 22. David S. Kosbie and Brad A. Myers. "A System-Wide Macro Facility Based on Aggregate Events: A Proposal," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 433-444.
 23. Brad A. Myers. "Demonstrational Interfaces: A Step Beyond Direct Manipulation," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 485-512.
 24. Brad A. Myers and David Mulsby. "Glossary," *Watch What I Do: Programming by Demonstration*, Allen Cypher, et. al., eds. Cambridge, MA: The MIT Press, 1993. pp. 593-603.
 25. Brad A. Myers. "Introduction," *Languages for Developing User Interfaces*. Boston: Jones and Bartlett, 1992. pp. 1-20.
 26. Brad A. Myers. "Ideas from Garnet for Future User Interface Programming Languages," *Languages for Developing User Interfaces*. Boston: Jones and Bartlett, 1992. pp. 147-157.
 27. Brad A. Myers, David Canfield Smith, and Bruce Horn. "Report of the 'End-User Programming' Working Group," *Languages for Developing User Interfaces*. Boston: Jones and Bartlett, 1992. pp. 343-366.
 28. Brad A. Myers. "Demonstrational Interfaces: A Step Beyond Direct Manipulation," *People and Computers VI*. Dan Diaper and Nick Hammond, eds. Cambridge, England: Cambridge University Press, 1991. pp. 11-30.
 29. Brad A. Myers. "Using AI Techniques to Create User Interfaces by Example," in Joseph W. Sullivan, ed, *Intelligent User Interfaces*. Reading, MA: Addison-Wesley/ACM Press, 1991. pp. 385-401.
 30. Brad A. Myers. "Issues in Window Manager Design and Implementation," ch. 6 of *Methodology of Window Management*, F. Robert A. Hopgood, et. al., eds. Berlin: Springer-Verlag, 1986. pp. 59-71. (Also contributed to other chapters, especially pp. 181-187.)

Refereed Journal Articles:

31. Jacob O. Wobbrock and Brad A. Myers. "Enabling Devices, Empowering People: The Design and Evaluation of Trackball EdgeWrite," *Disability and Rehabilitation: Assistive Technologies*, special issue on Accessibility. Volume 3 Issue 1, January, 2008, pp. 35-56.
32. Andrew J. Ko, Brad A. Myers, Michael Coblenz, and Htet Htet Aung. "An Exploratory Study of How Developers Seek, Relate, and Collect Relevant Information during Software Maintenance Tasks", *IEEE Transactions on Software Engineering*. Vol. 32, No. 12, Dec, 2006. pp. 971-987. [pdf](#)
33. Jeffrey Nichols and Brad A. Myers, "Controlling Home and Office Appliances with Smartphones". *IEEE Pervasive Computing*, special issue on SmartPhones, Vol. 5, No. 3, July-Sept, 2006. pp. 60-67. [pdf](#)
34. Jacob O. Wobbrock and Brad A. Myers. "Analyzing the Input Stream for Character-level Errors in Unconstrained Text Entry Evaluations." *ACM Transactions on Computer Human Interaction*. Vol. 13, no. 4, December, 2006, pp. 458 - 489. [pdf](#)
35. Ben Shneiderman, Gerhard Fischer, Mary Czerwinski, Mitch Resnick, Brad Myers, "Creativity Support Tools: Report from a U.S. National Science Foundation Sponsored Workshop". *International Journal of Human-Computer Interaction*, 20(2), 2006, pp. 61-77.
36. Andrew J. Ko and Brad A. Myers, "A Framework and Methodology for Studying the Causes of Software Errors in Programming Systems". *Journal of Visual Languages and Computing*, Volume 16, no. 1. Feb, 2005. pp. 41-84. [pdf](#)

37. Brad A. Myers, Jeffrey Nichols, Jacob O. Wobbrock, and Robert C. Miller. "Taking Handheld Devices to the Next Level." *IEEE Computer*. December, 2004. vol. 37, no. 12. pp. 36-43. [pdf](#) or [html](#)
38. Jacob O. Wobbrock, Htet Htet Aung, Brad A. Myers, and Edmund F. LoPresti. "Integrated Text Entry from Power Wheelchairs." *Behaviour and Information Technology*. Vol. 24, no. 3. May-June 2005. pp. 187-203. [BIT online](#)
39. Bradley T. Vander Zanden, Richard Halterman, Brad A. Myers, Rob Miller, Pedro Szekely, Dario A. Giuse, David Kosbie, and Rich McDaniel. "Lessons Learned from User's Experiences with Spreadsheet Constraints in the Garnet and Amulet Graphical Toolkits," *Software: Practice and Experience*. John Wiley & Sons, Inc. To appear.
40. Brad A. Myers. "Using Handhelds for Wireless Remote Control of PCs and Appliances," *Interacting with Computers*, Elsevier Science Journals. 2005. Volume 17, Issue 3, May 2005, Pages 251-264. [DOI ref](#) or [local pdf](#)
41. Brad A. Myers, John F. Pane and Andy Ko, "Natural Programming Languages and Environments". *Communications of the ACM*. (special issue on End-User Development). Sept, 2004, vol. 47, no. 9. pp. 47-52. [pdf](#)
42. Brad A. Myers. "Using Hand-Held Devices and PCs Together," *Communications of the ACM*. Volume 44, Issue 11. November, 2001. pp. 34 - 41. <http://www.cs.cmu.edu/~pebbles/papers/pebblescacm.pdf>
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366. Brad A. Myers, Alan Ferrency, Rich McDaniel and Roger Dannenberg. "Debugging Interactive Applications." 1996. <http://www.cs.cmu.edu/~amulet/papers/debugpaper.pdf>

World Wide Web Pages:

1. Brad Myers [home page](#). Including [List of Systems and Their Acronyms](#) and [CHI Conference Badges](#)
2. *User Interface Software Tools*. <http://www.cs.cmu.edu/~bam/toolnames.html>
A list of tools for creating user interfaces. (Awarded Editor's Choice, LookSmart Directory, a subsidiary of *The Reader's Digest*, Jan 22, 1997. Links2Go Key Resource award in the GUI topic, 22 Jul 98.)
3. *Computer Almanac - Numbers About Computers* <http://www.cs.cmu.edu/~bam/numbers/>
Interesting and Useful Numbers about Computers. (Top link on the original The Microsoft Network "Look it Up" page; selected for the "Exclusive Kool Sites" award from Komputer Klinik for June 14, 1996; Awarded four stars by Anbar Electronic Intelligence Computing Cool Sites for the January'98 Computing Milieux; Listed in Mexico's FirstNews: Internet at Home, Computers, Information and Opinion Articles, March'98; Earned the "Duke of URL Classy Site Pick Award," May, 1998; included in Addison Wesley Longman Publishing Company's on-line text books by [Neil A. Weiss on Statistics](#). Featured link in [LibrarySpot's Almanac Page](#), April, 2000.)
4. *Amulet Project Pages* <http://www.cs.cmu.edu/~amulet>
5. *Natural Programming Project Pages* <http://www.cs.cmu.edu/~NatProg>
6. *Demonstrational Interfaces Project Pages* <http://www.cs.cmu.edu/~bydemo>
7. *Garnet Project Pages* <http://www.cs.cmu.edu/~garnet>
8. *Pebbles Project Pages* <http://www.cs.cmu.edu/~pebbles>. Featured in the January 6, 2003, Vol. 5, no. 15, issue of the *Innovative Teaching Newsletter* on "[PDAs in the Classroom](#)".
9. *Command Post of the Future (CPOF) Project Pages* <http://www.cs.cmu.edu/~cpof>
10. *Silver Multi-media Editing Project Pages* <http://www.cs.cmu.edu/~silver>

Articles by Others Quoting Me or About My Work:

1. Olga Kharif, "Google's Orkut: A World of Ambition", [BusinessWeek.com](#), October 8, 2007. Reprinted at [MSNBC](#).
2. Virginia Gold, "ACM Names 34 Fellows for Contributions to Computing and IT", January 10, 2006. [html](#); and *ACM MemberNet*, Volume 4, Issue 6, January 2006. [html](#)
3. Ivanhoe Broadcast News, "Hi-Tech Typing", *Discoveries and Breakthroughs in Science*. (1:25 min. video and web story). October, 2005. [html](#)
4. Aaron Marcus, "When in Rome, do as the Romans do: HCII 2005 recap", *ACM Interactions*,

Volume 12, Issue 6, November + December 2005. pp. 48 - ff. ("why were such luminaries as ... Brad Myers from Carnegie-Mellon University in attendance?") [html](#) or [pdf](#)

5. Eric Smalley, "View from the High Ground: CMU's Brad Myers", *Technology Review News*, August 22, 2005. [html](#).
 - o Summarized by *ACM TechNews*, Volume 7, Issue 833: August 24, 2005. [html of the summary](#).
6. Alan Cohen, "Software Is Too Buggy and Unreliable," part of the special section on "The Ten Biggest Problems in Computing and How We'll Solve Them", *PC Magazine*, August 23, 2005. Vol. 24, no. 14, pp. 86-87. Also on [PCMag.com](#).
7. (TR Staff), "Write Steady", *Technology Review*, vol. 108, no. 8, August, 2005, p. 27. [html](#)
8. Anne Watzman, "Ko, Aung and Myers Win Best Paper Award At International Conference on Software Engineering". CMU Press Release. May 23, 2005. [html](#)
9. Anne Watzman, "Myers and Wobbrock to Showcase Projects At Microsoft Research Tech Fair 2005". CMU Press Release. April 27, 2005. [html](#) and [pictures](#)
10. Bongshin Lee, Mary Czerwinski, George Robertson, Benjamin B. Bederson. "Understanding Research Trends in Conferences using PaperLens," *Proceeding of the SIGCHI Conference On Human Factors In Computing Systems: CHI'2005*, Portland, Oregon, April 02 - 07, 2005. pp. 1969-1972. [pdf](#).
 "For example, the most prolific author is Brad Myers who has published 41 papers.... For End User Programming, Brad Myers was the most frequently cited author.... For example, Card and Myers are connected indirectly to each other because they have each co-authored a paper with Shneiderman."
11. "Copy-and-paste goes natural", *Technology Research News*, January 12/19, 2005. [html](#).
12. ACM TechNews, "Taking Handheld Devices to the Next Level", Volume 7, Issue 744: Friday, January 21, 2005. [html](#)
13. Christine Tomasino, "[A Presenter's Friend](#)" and "[Handheld Software for Student Collaboration](#)". *For What It's \$\$\$\$Worth\$\$\$*. Friday, January 21, 2005.
14. Byron Spice, "Text with an edge," *Pittsburgh Post-Gazette*, Monday, Nov. 29, 2004. p. A-6. [html](#)
15. Aaron Ricadela, "Trying to Make the Pen as Mighty as the Keyboard," *The New York Times*, November 11, 2004. p. E5. [html](#)
16. "Home is where the future is", *The Economist*, Sep 16, 2004. Print edition and [on-line](#)
17. The "Knowledge Encapsulation System", a commercial product of [Software Theories](#), specifically references [our paper](#) as an influence.
18. Mike Crissey, "Researchers aim to make debugging simpler", Associated Press, July 26, 2004. Appears in [Salon.com](#) and MSNBC and [CNN](#) and [CBSNews.com](#) and [Forbes.com](#) and [USAToday.com](#), and [Detroit News \(August 15, 2004\)](#), and [Melbourne, Victoria, Australia Herald Sun](#), and [Gadgetopia](#), and [404 Magazine \(in German\)](#), etc.
19. Sebastian Rupley, "Debugging for the Masses", *PC Magazine Online*, May 14, 2004. [html](#). Reprinted in Yahoo News
20. David Hart, "Researchers to Help Exterminate Bugs in Spreadsheets, Web Applications." NSF Press Release NSF PR 04-065 - May 05, 2004. [html](#). Also reprinted in:
 - o [Innovations Report, May 06, 2004](#)
 - o [Eurekalert, May 5th, 2004](#)
 - o [Newswise, May 5th, 2004](#)
21. Calvin Leske, "The Pittsburg Pebbles PDA Project" [sic], *The NSDL Scout Report for Math, Engineering, and Technology*. Volume 2, Number 19, September 26, 2003. [html](#)
22. Mark Boslet, "THE BIG IDEA: Microsoft Labs Searches For Legacy," *Dow Jones Newswires*, 22 September 2003.
23. Kim Peterson. "Inventions' wonderful world on display at Microsoft fair," *Seattle Times*. Wednesday, July 30, 2003. pp. E-1 and E-3. [html](#)
24. Microsoft PressPass Press Release, "It's Academic: Microsoft Research Collaboration Projects Fuel Technology Innovation at Universities". Redmond, Wash., July 28, 2003. [html](#)

25. Dan Gillmor, "Dan Gillmor: Designing new handhelds to improve human-computer interaction," *SiliconValley.Com; The San Jose Mercury News*, April 9, 2003. [html](#)
26. Kimberly Patch, "Handhelds Gain Space," *Technology Research News*, February 26/March 5, 2003, p. 4. [html](#)
27. Walter McKenzie, "PDAs in the Classroom," *Innovative Teaching Newsletter*, Vol. 5, no. 15, January 6, 2003, [html](#)
28. Ann Light, "Pebbles Project connects PDAs up Smartly," *UsabilityNews.com*, 17 December 2002. [html](#)
29. Michael Yeomans, "CMU Scientists Improving Computers' People Skills," *Pittsburgh Tribune-Review*, Tuesday, October 22, 2002. pages B7, B10. [html](#)
30. Mike Crissey, "Designers Work on All-in-One Remote," *Associated Press*, August 27, 2002. [html](#)
31. John Zyskowski, "Handhands in a new world order," *Federal Computer Week*, March 18, 2002. [html](#)
32. Kimberly Patch, "Correction choices key for speech software," *Technology Research News*, September 5, 2001. [html](#)
33. Catherine Zandonella, "How to Snarf with the Geeks," *The New Scientist*, vol. 172, no. 2311, October 6, 2001. p. 24.
34. Anthony Violanti, "Revolution in a Box: How 20 years of Personal Computers changed the world," *Buffalo News*, August 12, 2001. pp. A1, A8.
35. Jennie Borodko Stack, "Palm Pilot Connects Girl with Classroom," *QUEST*, Volume 8, Number 1, February 2001. pp. 48-49. [html](#)
36. Paul Beebe, "Software Marketed to trade under CMU brand name," *Pittsburgh Tribune-Review*, vol. 112, no. 285, Nov. 14, 2000.
37. Leander Kahney, "Prettying Up Linux," *Wired News*, Feb. 25, 2000. page 2. [html](#)
38. Andrew Wilson. "Computer Conference Set to Make Programming Easier," *Allegheny Business News*, vol. 6, no. 20, Nov 27-Dec 11, 1991. p. A5, A7.
39. "Look before you leap," *Computing*. June 13, 1991. p. 4.
40. Laurent Belsie. "Picture This: Visual Programming," *The Christian Science Monitor*. March 13, 1991. p. 12. also printed as "Researchers simplify computer programming," in *Grand Rapids Press*, MI. May 2, 1991.
41. Tony Durham. "Programming by Example and Interface Without Tears," *Computing*. April 7, 1988. pp. 22-23.

Professional Activities:

Chair:

- Corporate Sponsors Co-Chair, UIST'2007.
- Co-Organizer, ["End-User Software Engineering"](#) Dagstuhl Conference, 18.02.07 - 23.02.07, Seminar 07081, Organizers: Margaret M. Burnett, Gregor Engels, Brad A. Myers, Gregg Rothermel
- Corporate Sponsors Chair, UIST'2006, UIST'2005, UIST'2004, UIST'2003, UIST'2002, UIST'2001, UIST'2000 and UIST'1999: the ACM Symposium on User Interface Software and Technology.
- Associate Chair, [Product Design and Usability \(PDU\) Consortium](#), at Carnegie Mellon University, Pittsburgh, PA.
- Co-organizer, NSF [Workshop on Creativity Support Tools](#), June 13-14, 2005. Radisson Barcelo Hotel in Washington, DC.

- Program Co-Chair (with Jamie Frankel, MERL), Human Computer Interaction Consortium (HCIC'04), Fraser, CO, 2004.
- Co-Chair, Human-Computer Interaction working group at the ACM & NSF Workshop on Strategic Directions in Computing Research, June 14-15, 1996.
- General Conference Chair for UIST'95: the ACM Symposium on User Interface Software and Technology.
- Video Chair, 1990 and 1992 ACM SIGCHI Conferences.
- Organizer, SIGCHI'91 two-day Workshop: Computer Languages for Programming User Interface Software, April 28-29, 1991.
- Displays Chair, 1988 IEEE Workshop on Visual Languages.
- Chair, ACM SIGCHI User Interface Magazine Committee, 1990-1991.

Editorial:

- Guest co-editor, Special Issue of *ACM Transactions on Computer-Human Interaction (TOCHI)* on Web Accessibility, 2006.
- Associate Editor, *ACM interactions* magazine. 1993 (Founding) - present.
- Associate Editor, *ACM Transactions on Computer-Human Interaction*. 1993 (Founding) - 2006.
- Computer Sciences Special Editorial Board of *Interacting with Computers*. 1996 - present.
- Associate Editor, *Journal of Visual Languages and Computing*, Academic Press. 1989 (Founding) - present.
- Editorial Board, *Human-Computer Interaction Journal*, 1990-present.
- Guest co-editor, Special issue on Handheld Computing of *IEEE Computer*, September, 2003.
- Editorial Board, *inSight*, Academic Press Daily Science News Service on the Internet, 1998.
- Associate Editor, *ACM Transactions on Information Systems*, 1991-1993.
- Advisory Editor, Jones and Bartlett Publishers, Inc. 1991-1993.
- Guest editor, Special issue on User Interface Software of *ACM Transactions on Information Systems*, July, 1990.

Program Committees:

- Program Committee, The Fourth Workshop on End-User Software Engineering ([WEUSE IV](#)), Co-located with ICSE 2008, Leipzig, Germany. May 12, 2008.
- Organizing Committee, Dagstuhl Seminar 07081, "[End-User Software Engineering](#)", M. M. Burnett, G. Engels, B. A. Myers, G. Rothmel. Schloss Dagstuhl International Conference And Research Center For Computer Science, Germany. Feb 18, 2007 - Feb 23, 2007.
- Organizing Committee, 2nd Workshop on End-User Software Engineering ([WEUSE II](#)) at CHI'2006, Montreal, Canada, April 23, 2006.
- Program Committee, [Workshop on The Many Faces of Consistency in Cross-platform Design](#) at CHI'2006, April 23, 2006, Montreal.
- Program Committee, 2005, 2000, 1990, and 1989 ACM Symposiums on User Interface Software and Technology (UIST).
- Program Committee, 1st Workshop on End-User Software Engineering ([WEUSE 2005](#)) at ICSE 05, Saint Louis, MO, May 21st 2005.
- Program Committee, [Third IEEE Symposium on End-User Programming and Domain Specific Programming](#), October 28-31, 2003, Auckland, New Zealand.
- Program Committee, [MobileHCI'03](#): Fifth International Symposium on Human Computer Interaction with Mobile Devices and Services, Udine (Italy), 23-26 September 2003
- Program Committee, [International Workshop on Visual Languages and Computing, VLC'03](#), Florida International University, Miami, Florida, September 24-26, 2003.

- Program Committee, CHI'2003 Workshop on [Perspectives in End User Development](#).
- Program Committee, ICMi'2002: International Conference on Multimodal Interfaces.
- Program Committee, IUI'2002: International Conference on Intelligent User Interfaces (IUI), 2002.
- Program Committee, Shared Environments to Support Face-to-Face Collaboration Workshop at CSCW'2000.
- Program Committee, ADL'2000: IEEE Advances in Digital Libraries Conference, May 22-24, 2000, Washington, D.C.
- Program Committee, 4th USENIX Windows Systems Symposium. August 3-4, 2000, Seattle, Washington.
- Program Committee, DSL'99: 2nd Usenix Conference on Domain Specific Languages. Oct 6-9, 1999 in Austin, Texas.
- Doctoral Consortium Committee, 1997 ACM SIGCHI Conference.
- Short Papers & Interactive Posters: CHI'95.
- Videos: ACM CHI'91, and INTERCHI'93 Conferences.
- Papers: ACM SIGCHI+GI'87, CHI'89, CHI'91, and CHI'99 Conferences.
- Program: 1988, 1989 and 1990 IEEE Workshops on Visual Languages.
- Program: First (1990) and Second (1991) EUROGRAPHICS Workshops on Object Oriented Graphics.

Other Committees:

- Microsoft Consumer Productivity Experiences Group Advisory Council. 2006-present.
- Microsoft Research University Relations Faculty Advisory Board. 2003.
- DARPA HCI Workshop, October 28-29, 1992, Pittsburgh, PA.
- DARPA ISAT Study Group: Gentle Slope Systems. August, 1992, Woods Hole, MA.
- DARPA ISAT Study Group: Intelligent Interfaces. August, 1991, Woods Hole, MA.
- NSF Workshop: An Agenda for Human-Computer Interaction Research: Science and Engineering Serving Human Needs. Washington, D.C. March 4-5, 1991.
- SIGCHI Publications Committee, 1989-1994.
- SIGCHI Committee on Flagship Publications, 1989-1990.

Reviewer:

- NSF Panel Reviewer (various programs), 1997, 2000, 2004, 2005, 2007.
- Grant proposals for the National Science Foundation (NSF) of the USA, SBIR program, and National Science and Engineering Research Council (NSERC) of Canada.
- Government of Quebec, Ministere du Conseil executif, Fonds de developpement technologique.
- Book manuscripts for Academic Press, Morgan-Kaufmann, Addison-Wesley, Prentiss-Hall, Benjamin Cummings, etc.
- Papers for: SIGCHI, SIGGRAPH, UIST, TOCHI, HCI, IwC, IEEE CG&A, IEEE Computer, IEEE Software, IEEE Transactions on Software Engineering, ACM TOG, HICSS, IJCAI, TOPLAS, The Visual Computer, Software Practice & Experience, etc.

Societies:

SIGCHI, SIGGRAPH, IEEE Computer Society, ACM, IEEE (Senior Member), Electronic Frontier Foundation, Computer Professionals for Social Responsibility.

CMU Activities:

- Organizer for the HCI Seminar Series, 1992-1993, and 1999-present.
- Participant, Interdisciplinary Research Training Opportunities in Assistive Technology at CMU and the University of Pittsburgh ([IGERT Program](#)). 2003-present.
- Member, HCII Executive Committee, 2004-present.
- Marshall of the SCS Masters Students, CMU Commencement, May 20, 2007.
- Co-Leader, (with Michael Boninger) of the Human-System Interaction Thrust of the [Quality of Life Technology \(QoLT\) Engineering Research Center](#), 2005-2007
- Member, <http://www.qolt.org/>>Quality of Life Technology (QoLT) Engineering Research Center, 2005-present
- Member, [HCII Twelfth Anniversary](#) Committee, 2005-2006.
- Member, [General Motors Collaborative Laboratory](#), 2003-present.
- Member, Center for Wireless and Broadband Networking, 2001-2006.
- Member, MERITS of Pittsburgh: Medical Robotics and Information Technology for Medicine and Surgery, 2001-2005.
- Faculty Judge, CMU first round of the [Microsoft Imagine Cup Contest](#). April, 2004.
- Facilities Advisory Committee for the School of Computer Science, 2002-2003.
- Admissions Committee, HCI Institute's PhD Program, 1999-2003.
- Faculty sponsor for CMU's participation in the "ACM Quest for Windows CE Applications" contest, 1999, which won first place in the "Personal Productivity" team category.
- PhD for HCI Students Committee, 1998-1999.
- Admissions Committee, HCI Institute's Master's Program, 1995-1996.
- Steering Committee of the Human-Computer Interaction Institute, 1994-1997.
- Faculty Senator from Computer Science, May 1994 - June, 1996.
- Developed the *Guide for New Faculty in the School of Computer Science*, August, 1993 and May, 1994.
- CS Committee on Non-Tenured Reappointments and Promotions, 1993.
- CS Faculty Hiring Committee, 1992-1994.
- CS HCI Faculty Recruitment Coordinator, 1992-1994.
- Member, School of Computer Science Policy Committee, 1992-1996.
- Member, Computing Advisory Committee of the Faculty Senate, 1990-1992.
- Organizer for the 1989-90 Programming Systems Seminar Series.
- Faculty sponsor for CMU's participation in Apple Computer's 1987 "PC of the Year 2000" contest.

Teaching:

Courses

- 05-863/08-763/46-863: Introduction to Human Computer Interaction for Technology Executives. Fall, Mini 2, 2007.
- 08-702, 08-703: Contextual Design, User Interface Design and Testing. For MSIT eBusiness program, Fall, 2007. 27 students.
- 05-671/672: [Masters HCI Project](#). Spring/Summer, 2007.
- 08-702, 08-703: Contextual Design, User Interface Design and Testing. For MSIT eBusiness program, Fall, 2006. 32 students.
- 17-770 / 46-863: Introduction to Human Computer Interaction for Technology Executives. Fall,

Mini 1, 2006. 12 students.

- 05-671/672: Masters HCI Project. Spring/Summer, 2006. 29 students.
- 96-766, 96-768: Contextual Design, User Interface Design and Testing. For MSIT eBusiness program, Fall, 2005. 28 students.
- 96-766, 96-768, 96-771: Contextual Design, User Interface Design and Testing. For MSIT eBusiness program, Fall, 2004. 40 students.
- 05-830: Advanced User Interface Software, Fall, 2004. 7 students.
- 20-790: Human-Computer Interaction for eCommerce. Summer Session Two, 2004. (Taught for the UTC Flex-Mode distance-ed program) 19 students.
- 20-790: Human-Computer Interaction for eCommerce. Mini-6, Summer Session Two, 2004. 31 students.
- 05-630 / 05-430: Programming Usable Interfaces, Spring, 2004. 18 grad, 18 undergrad students.
- 05-830: Advanced User Interface Software, Spring, 2003. 5 students.
- 96-766: CMU West Campus - Information Technology Masters of eBusiness Technology, Contextual Design, User Interface Design and Testing, Fall, 2002 and Spring 2003. 6 students.
- 20-790: Human-Computer Interaction for eCommerce. Spring, first mini, 2003. 12 students. (Taught for the UTC Flex-Mode distance-ed program)
- 20-790: Human-Computer Interaction for eCommerce. Fall, second mini, 2002. 25 students.
- Human-Computer Interaction in eCommerce. June 26 - August 9, 2002. 34 students.
- 20-790: Human-Computer Interaction for eCommerce. Fall, second mini, 2001. 32 students.
- 05-631 Software Architecture for User Interfaces, Fall, 2001. 13 students.
- Human-Computer Interaction in eCommerce. June 25 - August 10, 2001. 45 students.
- 05-830, Advanced User Interface Software, Spring, 2001. Enrollment: 15 (8 PhD, 4 MS, 3 undergrad)
- 05-830, User Interface Software, Spring, 2000. Enrollment: 8 (5 MS, 1 PhD, 2 undergrad)
- 05-689, Evaluating Usability of Pebbles (Independent Study), Summer, 1999. Enrollment: 4 MS HCII.
- 05-830, User Interface Software, Spring, 1999. Enrollment: 12 (3 MS, 2 PhD, 6 undergrad, 1 staff)
- 05-830, User Interface Software, Spring, 1998. Enrollment: 9 (4 MS, 1 PhD, 3 undergrad, 1 staff)
- 05-830, User Interface Software, Spring, 1997. Enrollment: 14 (5 MS, 5 PhD, 1 undergrad, 1 special)
- 15-621 and 15-499(A), Intro to User Interface Programming, taught with Dan Olsen, Fall, 1996. Enrollment: 20 (10 HCII MS, 10 undergrad).
- HCI2: HCI Software Tools, A one day short course in the Carnegie Mellon Summer School of Computer Science, June, 1996.
- 15-820 (B) Advanced Topics in HCI: User Interface Software, Spring, 1996. Enrollment: 12 (1 undergrad, 4 PhD, 4 MSE, and 3 INI MS).
- 17-698B and 15-499A, Introduction to User Interface Programming, taught with Jim Morris, Fall, 1995. Enrollment: about 15 undergrad, 3 HCII MS.
- 15-820(C) and 15-499(B), Advanced Topics in HCI: User Interface Software. Spring, 1994. Enrollment: about 18 undergrad and 2 MS.
- 15-810A: Topics in User Interface Software, Spring, 1989. Enrollment: about 20, none for credit.

Independent Study

- *Creating a Simulator for a General Motors Navigation System*, Pegeen Shen, Fall, 2003.
- *New Features for Pebbles PocketPC*, Yuhua Li, Fall, 2003.
- *Implementing USB in Pebbles*, Dave Kong, Spring, 2002.
- *Evaluating HANDS*, Luis J. Cota, Fall, 2001.
- *Evaluating the Silver Video Editor*, Rishi Bhatnagar, Summer, 2001.

- *Evaluating the use of handhelds for the handicapped*, Sunny Ya-Ting Yang and Brian Yeung, Spring, 2001.
 - *Evaluating the Usability of the Hands Language*, Leah Miller, Spring, 2001.
 - *Using Laser Pointers in Meetings*, Choon Hong Peck, Fall, 2000 and Spring, 2001.
 - *Personal Universal Controller*, Marc Khadpe, Summer, 2000.
 - *Design for the Hands Language for Children*, Ruben Carbonell and Joonhwan Lee, Spring, 2000.
 - *Evaluating Floor Control for Small Groups with Palms*, Yu Shan Chuang and Marsha Tjandra, Spring, 2000.
 - *Evaluation Natural Expression of Algorithms*, Aristiwiidya B. Hardjanto ("IKA"), Spring, 1999.
 - *Using the PalmPilot in Meetings*. Herbert Stiel, Fall, 1997, Undergrad CS.
 - *Networking in Amulet*. John Huebner, Summer and Fall, 1997, MSE.
 - *Interactive Specification of Constraints*. Ilhwan Kwon, Spring and Summer, 1997. Undergrad ECE.
 - *The Design of the Atacama Desert Trek Interface*. Jennifer Gutwacks and Clark Slater, Spring, 1997. MS HCI.
 - *Natural Programming*. John Chang, Spring, 1997. Undergrad CS.
 - *Interface Builder for Amulet*. William Moher, Spring, 1996. Undergrad CS.
 - *Interpreting Football Plays Sketched by Demonstration*, Patrick Rogan, Spring, 1996. Undergrad Psychology.
 - *Creating Macintosh Games by Example*, Andrew Tepper, Spring, 1989, Undergrad CS.
-

Students:

PhD Students

- Thomas LaToza
- Jeffrey Stylos
- Andrew Ko
- Jeff Nichols. PhD, December, 2006, *Automatically Generating High-Quality User Interfaces for Appliances*. [pdf](#). Currently, Research Staff Member at IBM's Almaden Research Center.
- Jake Wobbrock. PhD, August, 2006, *EdgeWrite: A Versatile Design for Text Entry and Control*. [Abstract and PDF](#). Winner, 2007 SCS Dissertation Award. Currently, Assistant Professor at University of Washington.
- Rob Miller. PhD, May, 2002, *Lightweight Structure in Text*. [PDF](#). Currently, Assistant Professor at MIT. Thesis won SCS Doctoral Dissertation Award for 2002 and ACM Doctoral Dissertation Award Honorable Mention.
- John Pane. PhD, May, 2002. [A Programming System for Children that is Designed for Usability](#). Currently working for Rand Corporation.
- Rich McDaniel. PhD, May, 1999, *Building Whole Applications Using Only Demonstration*. Currently, at Siemens Corporate Research, Princeton, NJ.
- James Landay. PhD, Dec. 1996, *Interactive Sketching for the Early Stages of User Interface Design*. Currently, Associate Professor at Univ. Washington.
- Francesmary Modugno. PhD, May, 1995, *Extending End-User Programming in a Visual Shell With Programming by Demonstration and Graphical Language Techniques*. Currently, Assistant Professor, Department of Epidemiology, University of Pittsburgh

Masters Students

- Michael Coblenz, MS in CS, August, 2006, *JASPER: Facilitating Software Maintenance Activities With Explicit Task Representations*. [Abstract](#), [pdf](#).
- Andrew Faulring, MS in CS, December, 2005.
- Rajesh Seenichamy, MS in INI, August, 2003, *Communicating With X-10 And Vehicle Functions To Enable Two-Way Remote Control*.
- Juan Casares, MS in HCI, May 2002.
- Nobuhisa Yoda, MS in CMU's Information Networking Institute, Dec, 1994: *An Architectural Design of A Toolkit for Synchronous Groupware Applications*.
- David Kosbie. MS CSD.
- Andrew Werth, MS in INI, Oct. 1992, *Tourmaline: Formatting Document Headings by Example*.

CSD BS Thesis Students

- Ivan Gonzalez, BS, May, 2006. *Thumb Based Interaction Techniques for Input on a Steering Wheel*
- Michael Coblenz, BS, May, 2005. *Using Objects of Measurement to Detect Spreadsheet Errors*. CMU-CS-05-150, CMU-HCII-05-102. [Abstract](#), [pdf](#).
- Andrew Faulring, BS, May, 1999. *Gold: Charting by Demonstration*
- Chotirat ("Ann") Ratanamahatana, BS, May, 1998. *A Textual Programming Language and Environment for Beginners*
- Rajan Parthasarathy, BS, May, 1994, *Garnette: An Interactive User Interface Tool*.

CMU SCS PhD Thesis committee

- Chris Scaffidi (ISR PhD candidate)
- Marwan Abi-Antoun (ISR PhD candidate)
- Uri Dekel (ISR PhD candidate)
- Michael Gleicher (PhD CSD, 1994)
- Dean Rubine (PhD CSD, 1991)
- Tom Lane (PhD CSD, 1990)

External member, Thesis committee

- Ashwini Bhide, (PhD in Architecture, Carnegie Mellon University, in progress)
- Peter Tandler, (PhD in Computer Science, Darmstadt University of Technology, Germany, 2004)
- Jan Reinhardt, (PhD in Civil and Environmental Engineering, Carnegie Mellon University, 2003)
- Sailesh Panchang, (MS, 2002, Dept. of Rehabilitation Science and Technology, University of Pittsburgh)
- Linda McIver, (PhD, 2001, in Computer Science, School of Computer Science and Software Engineering, Monash University, Australia)
- Bernhard Suhm (PhD, 1998, University of Karlsruhe, Germany)
- T. Paul McCartney (PhD, 1996, Washington University in St. Louis, Computer Science Department)
- Martin R. Frank (PhD, 1995, Georgia Institute of Technology, College of Computing).
- David Maulsby (PhD, 1994, University of Calgary, Department of Computer Science)
- David Kurlander (PhD, 1993, Columbia University, Computer Science Department)

Visitors Supervised:

- A. Chris Long, Postdoc, 2001-2002.

- Prof. Yoshihiro Tsujino, Department of Information and Computer Sciences, Osaka University, May, 1996 to March, 1997.
 - Alex Klimovitski, November, 1994 to April, 1995.
 - Keiji Kojima, Hitachi, October, 1990 to June, 1991.
 - Osamu Hashimoto, NEC Corporation, July, 1990 to August, 1991.
 - Brad Vander Zanden, Postdoc, August, 1988 to July, 1990.
 - Philippe Marchal, 1987 to 1988
-

Invited Presentations:

Keynote Talks:

1. Keynote speaker, AAAI 2007 Spring Symposium on [Interaction Challenges for Intelligent Assistants](#), 26-28 March 2007, Stanford University, CA. "A User Acceptance Equation for Intelligent Assistants". [Abstract](#) and [pdf of PowerPoint slides](#).
2. Invited Research Overview, "End-User Programming". CHI 2006, April 22-27, 2006, Montreal, Canada.
3. Keynote speaker, [Third International Conference On Mobile And Ubiquitous Multimedia](#), MUM2004. October 27 - 29, 2004, College Park, Maryland. "Mobile Devices for Control of Ubiquitous Multimedia".
4. Keynote speaker, [The Seventh ACM SIGPLAN International Conference on Functional Programming](#), ICFP 2002. October 4-6, 2002, in Pittsburgh, PA. "Towards More Natural Functional Programming Languages."
5. Keynote speaker, [The Fourth Symposium on Human-Computer Interaction for Mobile Devices](#), Mobile HCI'02. September (18-20) in Pisa, Italy. "Mobile Devices for Control."
6. Keynote speaker, [IEEE Symposium on Visual Languages](#), VL'2000, Seattle, Washington, September 10-14, 2000. "Creating More Natural Programming Languages."
7. Keynote speaker, 14th Triennial Congress of the International Ergonomics Association, in conjunction with the 44th Annual Meeting of the Human Factors and Ergonomics Society. July 30 - August 4, 2000, San Diego, CA. "Past, Present and Future of User Interface Software Tools"
8. Keynote speaker, DSL'99: 2nd Usenix Conference on Domain Specific Languages, Austin, TX, October 3-6, 1999. "Towards More Natural Domain-Specific Languages."
9. Keynote speaker, ACM Multimedia 97 conference. Nov 11-13, 1997 in Seattle, WA. "Authoring Interactive Behaviors."
10. Keynote speaker, HCI '91: The British Computer Society Specialist Group in HCI Annual Conference, Aug 21, 1991, Edinburgh, UK.
11. Keynote speaker, 1990 IEEE Conference on Visual Languages, Chicago, Ill, October 6, 1990.
12. Keynote speaker, "The State of the Art in Visual Programming and Program Visualization," The British Computer Society Computer Graphics and Displays Group, International State of the Art Symposium on *Graphics Tools for Software Engineering: Visual Programming & Program Visualization*. London, England. March 16, 1988.

Other Talks and Colloquia:

1. Invited speaker, [DGPis40: Scientific Workshop & 40th Anniversary Reunion](#), University of Toronto, May 28-30, 2008.
2. CS547: Stanford University Human-Computer Interaction Seminar on People, Computers, and Design, September 28, 2007, Palo Alto, CA. "More Natural Programming Through User Studies".

[Talk announcement](#) and [streaming video of the full talk](#) (1hr24min).

3. Google Technical Seminar, "Update on the Natural Programming Project", September 26, 2007, Mountain View, CA. [Google Video \(1 hr\)](#)
4. Invited speaker, with Larry Masinter, at the Adobe Principal Scientist Council Briefing: "Survey: Past and Current Art of Making Programming Easier." San Francisco, CA. June 26, 2007.
5. Invited speaker, [SAP Academic Symposium](#), June 7, 2007, Mountain View, CA, "API Usability"
6. Distinguished Lecture Series, Department of Computer Science, University of Illinois at Urbana-Champaign, "More Natural Programming Through User Studies", April 9, 2007.
7. Celebrity Judge, at "[Usability Game Show - Pittsburgh](#)" as part of [World Usability Day](#), November 14, 2006.
8. Colloquium, Brown University Department of Computer Science, "More Natural Programming Through User Studies", November 2, 2006.
9. EUSES Consortium Workshop: End Users Shaping Effective Software, "Report of the CMU Natural Programming Group". Lincoln, Nebraska, October 25-27, 2006 and October 5-7, 2005.
10. Accenture. "More Natural Programming Through User Studies", September 8, 2006. Chicago, IL.
11. Google Technical Seminar, "More Natural Programming Through User Studies", October 27, 2005, Mountain View, CA.
12. Carnegie Mellon West, "Great Product Innovations" Speaker Series, "How the Human Interface Can Make or Break Great Product Innovations," October 27, 2005, Moffet Field, CA.
13. Microsoft Research Faculty Summit 2005, "Visions of Mobile Devices Beyond Their Current Role" in the session on "Enhanced Computing with Mobile Devices". July 19, 2005.
14. "Overview of Computer Science Support for Creativity" (with Randy Pausch) at [NSF Workshop on Creativity Support Tools](#), June 13-14, 2005. Radisson Barcelo Hotel in Washington, DC.
15. Microsoft Research Seminar, June 2, 2005. Redmond, WA. "More Natural Programming Through User Studies".
16. "End Users in End-User Software Engineering: Where HCI Cross Cuts SE", at the 1st Workshop on End-User Software Engineering ([WEUSE 2005](#)) at ICSE 05, Saint Louis, MO, May 21, 2005.
17. "University Relations--Mobile Computing and User Interface Research," at the Microsoft Research Tech Fair, April 27, 2005, Library of Congress, Washington, D.C. ([some pictures with Congressmen](#))
18. EUSES Consortium Workshop: End Users Shaping Effective Software, "Project Marlalade". Pittsburgh, PA September 8-10, 2004.
19. Microsoft Research Seminar, August 4, 2004. Redmond, WA. "Review of Recent Research: Citrine Smart Clipboard, WhyLine Interrogative Debugging, EdgeWrite Text Entry, and Pebbles PocketPC Software".
20. [HCIL Seminar Series](#), University of Maryland, College Park, MD. October 21, 2003. "Mobile Devices for Control."
21. University of New Orleans, LA, September 12, 2003. "Mobile Devices for Control."
22. Microsoft Research Seminar, July 30, 2003. Redmond, WA. "An Update on the Pebbles Project: PocketPCs, Smartphones and TabletPCs for Universal Remote Control and A New Input Method for Small Devices".
23. Microsoft Research Faculty Summit 2003, Innovation Excellence Plenary Session, July 28, 2003, and DemoFest session, July 29, 2003, "Mobility: Handhelds for Universal Remote Control".
24. MIT AI Lab, [HCI Seminar Series](#), May 9, 2003, "[Mobile Devices for Control](#)"
25. Mitsubishi Electric Research Laboratory, May 8, 2003, Cambridge, MA. "Mobile Devices for Control."
26. CS547: Stanford University Human-Computer Interaction Seminar on People, Computers, and Design, November 22, 2002, Palo Alto, CA. "Mobile Devices for Control". [Talk announcement](#) and [streaming video of the full talk](#) (1hr26min). (*Warning: video link crashes Netscape 4.7*)
27. [CMU Tech Bytes](#) Seminar, Sheraton Palo Alto, Palo Alto, CA. Nov. 21, 2002. "Mobile Devices for Control".

28. Invited Speaker, Workshop on [End-User Development](#) of the European Community Network of Excellence. Sept. 23, 2002. Pisa, Italy. "Making Programming Easier by Making it More Natural."
29. Microsoft Research Seminar, July 31, 2002. Redmond, WA. "PocketPCs as Controllers for Computers and Appliances; Update on The Pebbles Project"
30. Invited speaker, InterNational Committee for Information Technology Standards (INCITS) Technical Committee [V2 Meeting](#), June 27, 2002, Minneapolis, MN. "Pebbles PUC Automatic UI Generation Project."
31. Invited speaker, [State University of New York Technical Conference 2002](#). Educational Technology Officers Association. June 17 - 19, 2002. Hudson Valley Resort Convention Center in Kerhonkson, NY. "The Pebbles Project General Overview: Using Hand-Held Computers and PCs Together" and "Using Handhelds to Enhance Classrooms and to Help the Handicapped"
32. Computer Science Colloquium Series, Kent State University, Kent, OH. February 20, 2002. "The Pebbles Project: Using Hand-Held Computers and PCs Together"
33. Guest speaker, [Pittsburgh Pocket PC User Group](#), February 6, 2002. Pittsburgh, PA. "The Pebbles Project: Using Hand-Held Computers and PCs Together"
34. Guest speaker, Ohio State University Dept. of Computer and Info. Science, Columbus, Ohio, August, 7, 2001, "The Pebbles Project: Using Hand-Held Computers and PCs Together."
35. Invited speaker, [Grid on the Go](#), May 20-22, 2001, NCSA, University of Illinois at Urbana-Champaign. "Using Wireless Handheld Devices in the Classroom, Office and Home."
36. Microsoft Research Seminar, April 6, 2000. Redmond, WA. "Update on The Pebbles Project: Using a Handheld as a Personal Universal Controller and to Augment a Laser Pointer in Meetings"
37. HCI Seminar Series, Carnegie Mellon University, 2/07/01, "Using Hand-Held Computers and PCs Together: The Pebbles Project"
38. Symbol Technologies, Inc. lunchtime presentation, August 25, 2000. Pittsburgh, PA. "The Pebbles Project: Using Hand-Held Computers and PCs Together"
39. Microsoft Research Seminar, August 2, 2000. Redmond, WA. "Using Windows CE Computers in Classrooms; and Public-Private Data Sharing Using a PC and PocketPCs; Update on The Pebbles Project"
40. Microsoft Research Seminar, December 7, 1999. Redmond, WA. "Towards More Natural Programming Languages".
41. HCI Seminar Series, Carnegie Mellon University, 11-17-99, "Using Handheld Computers and PCs Together". Click [here](#) to see a video of this talk.
42. Computer Science Colloquium, Brown University, Nov. 4, 1999. "Using Hand-Held Computers and PCs Together."
43. Invited speaker, IFIP Working Group 2.7/13.4 (User Interface Engineering), May 13, 1999, Pittsburgh, PA. "The Architectural Issues in Amulet."
44. Invited speaker, Human Computer Interaction Consortium (HCIC'99), Fraser, CO, Feb 3-9, 1999, "Prospects and Visions for User Interface Software Tools."
45. Invited speaker, The Ninth Annual NEC Research Symposium: Human Centric Multimedia Community, Nara, Japan, Aug. 30-Sept. 1, 1998.
46. Boeing Shared Services, Seattle, WA. June 17, 1998, "Amulet: Comprehensive Support for Graphical, Highly-Interactive User Interfaces"
47. Microsoft Research, Redmond, WA. June 15, 1998, "Collaboration Using Multiple PDAs Connected to a PC"
48. Invited speaker, CHI-Squared, The Chicago CHI Local Group, Chicago, IL, June 9, 1998.
49. Colloquium speaker, Lucent Labs, Naperville, IL, June 9, 1998. "Using PalmPilots Synchronously in Meetings."
50. Invited speaker, Human Computer Interaction Consortium (HCIC'98), Fraser, CO, March 4-8, 1998. "Natural Programming for Knowledge Management."
51. Colloquium speaker, IBM Thomas J. Watson Research Center, Hawthorne, NY, February 13,

1998. "Using PalmPilots Synchronously in Meetings."
52. Distinguished Lecture Series, University of Tennessee, Knoxville, TN, Nov. 3, 1997.
 53. Colloquium speaker, Electric Boat Division of General Dynamics, Groton, Conn, May 1, 1997.
 54. Invited speaker at the AAAI Spring Symposium on "Acquisition, Learning and Demonstration: Automating Tasks for Users", presented overview of "Demonstrational Interfaces." Stanford, CA, March 25-27, 1996.
 55. Computer Science Colloquium, Washington University in St. Louis, MO, January 19, 1996.
 56. Distinguished Lecture Series, University of Maryland, College Park, MD, February 28, 1995.
 57. Invited Speaker, Software Engineering Tools and Techniques Conference, Los Angeles, CA, February 24 1995.
 58. Distinguished Lecture Series, University of Toronto, Toronto, Canada, December 6, 1994.
 59. Colloquium speaker, Toronto Computer Human Interaction (TORCHI) society, Toronto, Canada, December 5, 1994.
 60. Distinguished Lecture Series, University of York, Toronto, Canada, February 11, 1994.
 61. ARPA Workshop on HCI Architecture and Toolkits, 11-14 January, 1994, San Diego, CA.
 62. Colloquium speaker, Georgia Tech, Atlanta, GA. July 28, 1993.
 63. Colloquium speaker, University of Virginia, Charlottesville, VA. February 24, 1992.
 64. Invited Speaker, "Workshop on Programming by Example," sponsored by Apple Computer Inc., March 11-12, 1992. Cupertino, CA.
 65. Lecturer, "Extending Direct Manipulation: Demonstrational Interfaces and User Interface Development Environments," User Interfaces Strategies'92, A live Satellite TV Broadcast, from the University of Maryland, December 12, 1991.
 66. Colloquium speaker, Xerox Palo Alto Research Center, Palo Alto, CA. June 20, 1991.
 67. Colloquium speaker, Adobe Systems, Inc., Mountain View, CA. June 20, 1991.
 68. Colloquium speaker, Hewlett Packard Software Engineering Systems. Sunnyvale, CA. January 29, 1991.
 69. Colloquium speaker, Apple Computer, Inc. Cupertino, CA. January 28, 1991.
 70. Colloquium speaker, Waterloo University, Waterloo, Ontario, Canada, November 14, 1990.
 71. Colloquium speaker, Lotus Corporation, Cambridge, MA, November 7, 1990.
 72. Colloquium speaker, Siemens Corporate Research, Princeton, New Jersey, May 14, 1990.
 73. Visiting Distinguished Engineer under the IBM Visiting Scholar Program, Northeastern University, Department of Industrial Engineering and Information Systems, April 19, 1990.
 74. Colloquium speaker, University of Toronto, Toronto, Ontario, Canada, August 8, 1989.
 75. Colloquium speaker, Boeing Corporation, Seattle, WA, July 17-18, 1989.
 76. Colloquium speaker, Microsoft Corporation, Seattle, WA, Dec. 5-6, 1988.
 77. Invited speaker, The Toronto Exxperience; A Conference Celebrating Twenty Years of Computer Science Research at the University of Toronto. Toronto, Canada. May 9-13, 1988.
 78. Invited speaker, AAAI Workshop on Architectures for Intelligent Interfaces. March 29-April 1, 1988. Monterey, CA.
 79. Colloquium speaker, Department of Computer Science, York University, York, England. March 18, 1988.
 80. Colloquium speaker, Department of Computer Science, University of Glasgow, Glasgow, Scotland, Great Britain. March 17, 1988.
 81. Colloquium speaker, Department of Computer Science, Queen Mary College, London, England. March 17, 1988.
 82. Colloquium speaker, Department of Computer Science, Rensselaer Polytechnic Institute, Albany, New York. January 28, 1988.
 83. Colloquium speaker, Department of Electrical Engineering and Computer Science, The George Washington University, Washington, D.C. October 14, 1987.
 84. Invited speaker, *ACM SIGGRAPH Workshop on Software Tools for User Interface Development*. Seattle, Washington. November 17-19, 1986.

85. Invited speaker, *Alvey MMI Workshop on Window Management*. Abingdon, Oxfordshire, England. April 29-May 1, 1985.

Tutorials:

- "User Interface Tools," tutorial #36 presented at *CHI'94*. Boston, MA. April 24-28, 1994.
- "User Interface Tools," tutorial #27 presented at *INTERCHI'93*. Amsterdam, The Netherlands. April 24-29, 1993.
- "The State of the Art in User Interface Development Environments," tutorial presented at HCI '91: The British Computer Society Specialist Group in HCI Annual Conference, Aug 20, 1991, Edinburgh, UK.
- "Visual Computing Environments," tutorial #23 presented at *SIGCHI '90*. Seattle, WA, April 1-5, 1990.
- "User Interface Design and Implementation," March 26, 1990 at Carnegie Group, Inc., Pittsburgh, PA.
- "Visual Computing Environments," tutorial #17 presented at *SIGGRAPH '89*. Boston, MA, July 31-August 4, 1989.
- "Visual Computing Environments," tutorial #14 presented at *SIGCHI '89*. Austin, Texas, April 30-May 4, 1989.
- "Human-Computer Interaction Technologies and Techniques," tutorial #11 presented at *SIGCHI '88*. Washington, D.C. May 15-19, 1988.
- "Workshop on Visual Programming" at Xerox EuroPARC, supported by Rank Xerox and Apple Computer in association with the British Computer Society Displays and HCI Specialist Groups. Cambridge, England. March 15, 1987.
- "Human-Computer Interaction: Selected Theories, Technologies and Techniques," tutorial #21 at *SIGGRAPH '87*. Anaheim, CA. July 27-31, 1987.

Panels:

- Invited panelist, "The Role of Interactive Systems in Universal Access," NSF Interactive Systems Grantees Workshop: ISGW '97, August 17-19, 1997, Stevenson, Washington.
- Panelist, "Model-based User Interfaces: What is it and why should I care?" *ACM Symposium on User Interface Software and Technology, UIST'94*, November, 1994. Los Angeles, CA.
- Panelist, "From Research Prototypes to Usable, Useful Systems: Lessons Learned in the Trenches," *ACM Symposium on User Interface Software and Technology, UIST'93*, November 3-5, 1993. Atlanta, GA.
- Organizer and Panelist, "Heuristics in Real User Interfaces," *INTERCHI'93*, Amsterdam, The Netherlands. April 24-29, 1993.
- Organizer and Panelist, "User Interface Design Tools," *1991 Lisp Users and Vendors Conference*, Gaithersburg, MD, Oct 28-Nov 1, 1991.
- Panelist, "HCI: Past and Future," *HCI '91: The British Computer Society Specialist Group in HCI Annual Conference*, Aug 23, 1991, Edinburgh, UK.
- Moderator and Panelist, "Demonstrational Interfaces, Coming Soon?" *SIGCHI'91*, New Orleans, LA. April 28-May 2, 1991.
- Panelist, "Direct Manipulation or Programming: How Should We Design Interfaces?" *ACM Symposium on User Interface Software and Technology, UIST'89*, Williamsburg, VA, Nov. 13-15, 1989.
- Moderator and Panelist, "User Interface Toolkits: Present and Future," *SIGGRAPH '88*, Atlanta, GA, August 1-5, 1988.
- Panelist, "Software Tools for User Interface Management," *SIGGRAPH '87*. Anaheim, CA. July

27-31, 1987.

- Panelist, "The Future of Window Systems," *SIGGRAPH '86*. Dallas, Texas. August 18-22, 1986.
- Panelist, "User Interface Management Systems," *Graphics Interface '84*. Ottawa, Ontario. May 28-June 1, 1984.

Participation in Workshops:

(when not a speaker or organizer)

Invited participant, "[Adobe Education Designer and Developer Conference](#)", March 2-4, 2008. San Francisco, CA

- Invited participant, "[2007 Summer Institute on the Human Side of Software Development](#)," co-sponsored by the University of Washington and Microsoft Research. August 12-17, 2007, Skamania Lodge, Stevenson, WA.
- Invited participant, "NSF Human-Centered Computing (HCC) Workshop", Arlington, Virginia, September 18-19, 2006
- Invited participant, "User Interfaces that Span Hand-Held and Fixed Devices," CHI'2001 Workshop on [Distributed and Disappearing User Interfaces in Ubiquitous Computing](#), Seattle, WA, March 31-April 1, 2000.
- Invited participant, "[Future Mobile Device User Interfaces](#)" at CHI'2000, April 1, 2000. The Hague, The Netherlands. Matthias Schneider-Hufschmidt, organizer.
- Invited participant, "Handheld CSCW Workshop at CSCW'98," Seattle, November 14. Hans Gellersen and Albrecht Schmidt, organizers. <http://www.teco.edu/hcscw/>
- Invited participant, "CHI 98 Workshop On Learner-Centered Design," April 20, 1998. Sherry Hsi and Elliot Soloway, organizers.

Discussant:

- "Automated Selection of Remote Control User Interfaces in Pervasive Smart Spaces," by Nirali Desai, Khomkrit Kaowthumrong, John Lebsack, Nishant Shah, Richard Han. Human Computer Interaction Consortium (HCIC'02), Fraser, CO, Jan 30-Feb 3, 2002.
- "The Next Generation of Ubiquitous Computing," by Gregory Abowd and Elizabeth Mynatt. Human Computer Interaction Consortium (HCIC'99), Fraser, CO, Feb 3-9, 1999.
- "Tools and Environments for U.I. Design," SIGCHI'89. Austin, Texas. May 4, 1989.
- "Input," SIGCHI+GI'87. Toronto, Ontario, Canada. April 8, 1987.